

A PROPOSAL TO DEVELOP A PROTO-TYPE
COMMUNITY RESPONSE TO LOCAL RUNOFF POLLUTION

PUTTING LOCAL COMMUNITIES IN CHARGE

A Community Response to Runoff Pollution for Centerville, Maryland

July 13, 2005

Mr. David O'Neill, Executive Director
Chesapeake Bay Trust
60 West Street, Suite 200 A
Annapolis, Maryland 21401

Dear Mr. O'Neill

Subject: Intent to Apply, Pioneer Grants Program

Thank you for providing the Chesapeake Bay Recovery Partnership and the Alliance for the Chesapeake Bay with an opportunity to submit a proposal to the Chesapeake Bay Trust's Pioneer Grants Program. The Chesapeake Bay estuary is an international resource, yet its fate lies in the hands of the hundreds of individual towns, cities, and counties throughout the watershed. This initiative will help the community of Centerville take action, by putting the resources in the hands of its citizens in an innovative program to prevent urban runoff pollution.

What if you could retrofit an existing urban area and dramatically reduce non-point pollutant loads and water quality problems, restore the ecological and biological integrity of receiving streams and waters and effectively engage property owners in pollution prevention? These are the goals of "*Putting Local Communities In Charge*". We are requesting a grant of \$100,000 from the Chesapeake Bay Trust's Pioneer Grants Program to develop a model for urban restoration and to demonstrate that streams hit hard by urban runoff can be restored. Unlike industrial or municipal wastewater treatment plant discharges, most urban runoff pollution is derived from more diffuse sources that are closely related to every day municipal and personal activities – requiring not only innovative, but community based approaches to address the problem. The support for "*Putting Local Communities In Charge*" will result in an urban restoration master plan for the Town of Centerville that will illustrate how urban runoff can be eliminated through innovative pollution prevention techniques; the demonstration of several innovative urban BMPs; and the creation of a public involvement and education program designed to engage homeowners in implementing pollution prevention/reduction practices and behaviors themselves.

Attached please find a pre-proposal supporting this request. On behalf of the Chesapeake Bay Recovery Partnership and the Alliance for the Chesapeake Bay, we appreciate your consideration of this request.

Sincerely,

Charles S. Frentz, *Executive Director*
The Chesapeake Bay Recovery Partnership

David B. Bancroft, *Executive Director*
The Alliance for the Chesapeake

C.Ronald Franks, *Secretary*
Maryland Department of Natural Resources

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Submitted by:

The Chesapeake Bay Recovery Partnership:

The Chesapeake Bay Recovery Partnership is a partnership between the Maryland Department of Natural Resources and the Oyster Recovery Partnership. Its goals are to raise monies from both the private and public sectors in order to provide funding for large-scale bay restoration projects and to cause those projects to be implemented.

AND

The Alliance for the Chesapeake

The Alliance for the Chesapeake Bay is a regional nonprofit organization that builds and fosters partnerships to protect and to restore the Bay and its rivers

Charles S. Frentz, *Executive Director*
The Chesapeake Bay Recovery Partnership

David B. Bancroft, *Executive Director*
The Alliance for the Chesapeake Bay

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C.Ronald Franks, Secretary
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PROJECT SUMMARY

More on the ground implementation and measurable results has been demanded by Maryland's citizens, EPA, the Maryland Tributary Teams, Local Governments, the Chesapeake Bay Citizens Advisory Committee, and the Chesapeake Bay Program. In the past, available restoration resources have been spread to all areas where restoration is needed. This has helped stabilized water quality or produced small improvements in many areas, but has not reached the point where a water body had been declared restored. A comprehensive pilot program has been initiated to develop best business practices and implement the processes, partnerships, assessment, and implementation tools needed to meet that threshold for restoring a single sub-watershed of the Chesapeake Bay. The Corsica River watershed is proposed to be the first "*Targeted Watershed*" and the experience in the Corsica will serve as the model for the selection and restoration of subsequent watersheds throughout Maryland's Chesapeake Bay watershed.

In order to demonstrate that measurable results can be achieved with a concentration of efforts, significant levels of implementation and innovation must occur in both the urban and agricultural areas of the watershed. Recognizing the contribution of uncontrolled urban and suburban runoff to the local impairments in the streams and rivers of the Corsica watershed – (much of the Town of Centerville was built prior to the codification of storm water management) – "*Putting Local Communities In Charge*" is proposed to provide the Town of Centerville with the tools needed to take on this challenge and to build the citizen involvement that is key to success. "*Putting Local Communities In Charge*" will result in an urban restoration master plan for the Town of Centerville that will illustrate how urban runoff can be eliminated through innovative pollution prevention techniques. By implementing several innovative urban best management practices we will be able to demonstrate that streams hit by urban runoff can be protected and restored. In addition to the urban restoration master plan and demonstration projects, this project will provide hands-on training and resources to engage homeowners in implementing pollution prevention/reduction practices and behaviors. The activities undertaken through this proposal will be measured against clear, quantifiable standards of ecosystem health being collected as the foundation of the comprehensive *Corsica Watershed Project*.

PRACTICES, STRATEGY, GEOGRAPHIC AREA

The Town of Centerville is the center of government for Queen Anne's County, Maryland. Established in 1794 the Town has a current population of 2,300 and is one of the Counties burgeoning growth centers. Centerville occupies approximately 1406 acres and has two streams, Mill Stream and Gravel Run, which flow through town. Mill Stream is located at the south end of town, Gravel Run the north. Much of the town was built prior to the codification of storm water management. Runoff was allowed to flow unimpeded to Mill Stream and Gravel Run.

Phase I – Feasibility Study.

- a. Use GIS base to map and quantify amount and location of impervious areas in the town of Centerville (DNR)
- b. Compute total impervious cover for Centerville
- c. Identify impervious cover that is directly connected to receiving waters
- d. Identify impervious cover that is disconnected by pervious areas (lawns, buffers, etc)

***KEY POINT** – As part of location, identify and prioritize all impervious areas that are within 300 feet of riparian zones. These areas will be computed as a percentage of the total impervious cover. Based on the work of the Smithsonian Environmental Research Consortium (SERC) these are the most critical areas in terms of impacts to streams and will be targeted by the restoration plan.

- e. Develop a comprehensive list (menu) of urban best management practices that are available for use.
(See Appendix A)

***KEY POINT**- these available urban best management practices will be compiled into a catalog of urban best management practices for Chesapeake Bay Communities.

- f. Develop a matrix of impervious areas and urban best management practices that can be used to disconnect impervious area and get runoff back into the ground
- g. Develop templates of typical urban best management practices applications for different types of impervious cover and will document typical costs for typical applications
 - **Buildings** – (green roofs, disconnection of roof drains, etc.)
 - **Parking lots** – (permeable paving, filter strips, bioretention, etc.)
 - **Streets** – narrow streets (Seattle SEA Street), grass swales, tree planters, green buffers, other,
- h. Identify potential demonstration sites: Potential demonstration sites will be identified. A mix of school sites, public buildings and private properties will be targeted, to reflect the need for a community wide participation in the restoration effort.
 - **School sites**- (elementary, middle high school)
 - **Public Buildings** – Library, Fire station, city hall, maintenance facilities
 - **Homeowners, communities** – work with community to groups to identify potential retrofits and activities on individual or community properties. These include:
 - i. Picking up after pets
 - ii. Reducing use of fertilizer
 - iii. Reducing runoff from yards
 1. Bay Scapes
 2. Downspout disconnection
 3. Rain barrels
 4. Rain gardens
 5. Lawn conversions (bayscapes)
 - iv. Toxics management
 1. Car washing
 2. Oil leaks
 3. Pesticides & herbicides
- i. Develop estimates of the total amount of existing impervious areas that can be disconnected or controlled with urban best management practices
- j. Identify locations where stream restoration activities, especially reestablishment of stream buffers might be required to supplement urban best management practices.

- k. Identify costs associated with these estimates
- l. Identify anticipated outcomes of these activities

Phase II – Community/Stakeholders Coordination.

Present results of Feasibility Study to community in a series of public meetings and obtain input on the elements of the study that should be incorporated into an urban restoration master plan.

- Town of Centerville
- Queen Anne's county Soil Conservation District
- USDA-NRCS
- Chester River Association
- The Eastern Shore Land Conservancy
- Queen Anne County Planning Commission
- Queen Anne County Planning & Zoning
- DNR
- Citizens and Farmers
- University of MD Cooperative Extension Service

Phase III – Urban Restoration Master Plan.

Based on the data developed in the Feasibility Study and the community coordination activities, develop an Urban Restoration Master Plan for the city of Centerville. The master plan will describe and illustrate the following elements:

1. *Goals and objectives of the urban restoration master plan*
 - a. Use urban best management practices to restore hydrology (restore the volume of runoff to predevelopment levels; restore groundwater recharge, eliminate flashy flows associated with impervious surfaces, reduce nuisance flooding from mid-size storms)
 - b. Use urban best management practices to optimize pollutant removal from urban runoff
 - c. Use urban best management practices to help reduce and/or eliminate sources of impairment coming from urban areas to Mill Stream, Gravel Run, Three Bridges Branch and Corsica river
 - d. Supplement urban best management practices with stream restoration activities especially re-establishment of stream buffers where needed.
 - e. Specifically target improving the MBSS physical habitat index of biological integrity at the mouth of Gravel run from poor to fair or good.
2. *Implementation and Demonstration Strategies*
 - a. Primary focus of restoration activities will be within 300 feet of riparian zones, where according to SERC the greatest impact occurs
 - b. Private residences and communities will be targeted in recognition of the fact that restoration activity require community wide participation for success
 - c. School sites (elementary, middle and high school) will be targeted in conjunction with the development of outreach and educational programs
 - d. Public facilities (library, city hall, firehouse, etc.) will also be targeted to obtain maximum public exposure for the demonstration projects
 - e. Activities to supplement urban best management practices including stream restoration and re-establishment of stream buffer will be identified and described
 - f. A number of demonstration projects will be identified in conjunction with the development of the Urban Restoration Master Plan to demonstrate the feasibility of the identified alternatives.

Phase IV – Demonstration Projects.

A number of demonstration projects will be identified and implemented as part of this work. The following demonstration projects are anticipated:

- (1) public site: design and build @ \$ 20K, each = \$20K
- (12 to 15) private sites: design and build @ \$ 2K = \$ 30 K

Phase V – Public Involvement and Education Program

The Corsica watershed has approximately 3000 residents and thus each one can and will also be targeted for increased technical assistance in the design and installation of best management practices at the house hold/ private property level. The Alliance for the Chesapeake Bay will develop and initiate a program to raise awareness of storm water runoff and encourage citizens to change their habits in activities such as caring for lawns, driving and maintaining cars, and walking pets. Through a public involvement and education program, the Alliance will develop a training, recognition and small grants program for residential pollution prevention.

PIONEERING

Communities around Maryland are recognizing the consequences of uncontrolled urban and suburban runoff and are showing a growing interest in pollution prevention techniques that incorporate the innovative strategies presented in *“Putting Local Communities in Charge”* to protect their water resources. This project will provide those pioneering communities with a model – demonstrating how to incorporate these innovative techniques in the retro-fitting of existing systems, as well as the development of their future storm water plans. In addition, Storm water management activities are almost exclusively targeted towards public property and new development. Retrofitting existing sites is not the norm and targeting homeowners is both bold and innovative. The partnership with the Alliance to establish and operate a public involvement and education program for homeowners, empowering the community to change their habitats in activities such as caring for lawns, driving and maintaining cars, and walking pets, is not only innovative but critical to long-term success. The sub-grants to homeowners will include a maintenance agreement to maintain for a minimum of 5 years the BMPs that were installed.

ANTICIPATED RESULTS

It is anticipated that “*Putting Local Communities in Charge*” will reduce the impact of urban runoff on Mill Stream, Gravel Run and the Corsica River. The urban restoration master plan and demonstration projects for the Town of Centreville will provide a model for other communities and a method for subsequent “*Targeted Watersheds*”, demonstrating that streams hard hit by urban runoff can be protected and restored. In addition, this project will result in an education and training program that will engage homeowners in the implementation of pollution prevention/reduction practices and behaviors. The activities undertaken through this proposal will ultimately be measured and evaluated against clear and quantifiable standards of ecosystem health that are being collected as part of the comprehensive *Corsica Watershed Project*. Establishing a baseline for water quality and flow in

PROMOTING TRANSFERABILITY

This project will serve as a model in several ways. The Corsica River watershed is proposed to be the first targeted watershed and the experience in the Corsica will serve as the model for the selection and restoration of subsequent watersheds throughout Maryland's Chesapeake Bay watershed. "*Putting Local Communities In Charge*" will serve as a model for the implementation and innovation that must occur in the urban areas of future targeted watersheds – as well as a model for any jurisdiction interested in undertaking urban restoration activities. In addition, the Town of Centreville received a grant from EPA in 2002 to help fund the development of a Watershed Restoration Action Strategy (WRAS). The WRAS program has completed Action Strategies in fourteen (14) watersheds throughout Maryland. Moving forward on the implementation of the Action Strategy in the Corsica Watershed will lead the way for the rest of the WRAS watersheds. Promotion of the project in general throughout the State and region will provide the most active transfer of the model.

PROJECT SCHEDULE

[illegible]

Project /Follow-up and Monitoring, Close-out																		X	X	X
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PUBLIC AWARENESS

The Alliance will develop a brochure targeting local communities; outlining 10 to 20 steps that a homeowner could do that would reduce urban runoff. “Bay-Friendly Homes” will be certified by the Alliance and be provided with a plaque to display on their property. The Alliance will also organize community workshops to engage residents in this certification program and to train them on the proper techniques of implementing these pollution prevention techniques. In coordination with these training, the Alliance will select, distribute and track implementation grants to homeowners installing urban best management practices. Grants would be made available for implementation materials – e.g. rain barrels, plants, planting material. In addition to the public involvement and education program, Phase II of this project is a series of public meetings to obtain input on the interests, concern and thought from the stakeholders on what is feasible and should be incorporated into the urban restoration master plan.

QUALIFICATIONS AND PARTNER ORGANIZATIONS

Organization/Agency	Role	Responsibility
The Chesapeake Bay Recovery Partnership:	Co-Leader	CBRP oversees entire project. ORP does administration, accounting and co-manages. Maryland Department of Natural Resources as a partner of the Chesapeake Bay Recovery Partnership will provide the technical support, design support, monitoring and evaluation, outreach and education assistance. Monitors implementation progress and record keeping.
Alliance for The Chesapeake	Co-Leader	Oversees public involvement and education program, provides homeowner grants administration, outreach and education assistance.
Town of Centreville	Cooperator	Technical support, permit review, design support, outreach and education assistance.
Maryland Department of the Environment	Cooperator	Technical support, design support, monitoring and evaluation, outreach and education assistance.
Queen Anne’s County	Cooperator	Provides collaboration and review of codes and programmatic changes.
University of Maryland	Cooperator	Technical support, monitoring and evaluation.
Chester River Association	Cooperator	Provides outreach and education assistance.

PRELIMINARY BUDGET

Activity	Budget
1. Project initialization:	\$ 2,000.00
2. Feasibility Study/Baseline:	\$ 17,000.00
3. Community Outreach	\$ 9,000.00
4. Master Plan	\$ 10,000.00
5 Demonstration projects;	
a. 1 school site (design/build @ \$20K/site)	\$ 20,000.00
b. 12-15 private sites (design/build @ \$30K/site)	\$ 30,000.00
6. Monitoring ¹	\$ 12,000.00
Total:	<u>\$ 100,000.00</u>

¹ The activities undertaken through this proposal will be measured against clear, quantifiable standards of ecosystem health being collected by the project partners as the foundation of the comprehensive *Corsica Watershed Project*. Specific contributions will be identified in the full proposal.

APPENDIX A

Types of Urban Best Management Practices (Modified from P.G. Co. , 2002)

Conservation & Minimization	Storage	Filtration & Infiltration	Conveyance	Landscaping
Site fingerprinting	Cisterns		Grassed channels - dry swale - exfiltration -infiltration trench	Bioretention - Islands -Linear - Bench
Narrow streets Street parking	Roof top detention	Infiltration trench	Bioretention channels	Riparian buffers
Porous pavement	Green roofs	Below pavement infiltration basin	Disconnection of impervious areas	Backyard rain gardens
Traffic calming w/ SWM	Subsurface storage	Exfiltration devices (dry wells)	Landscape swale (P)	Wetland restoration & enhancement
Pedestal sidewalks	Pedestal sidewalks	Vegetative filter (P)		Slope reduction
Sidewalk Reduction	Rain barrels	Storm water planter (P)		Filter strips
Hydraulic disconnection	Yard storage	Landscape infiltration		Fish pond
Concave medians	Inlet restriction	Sand filter (P)		Dripline planter box
Grated infiltration system	Curb storage	Filtera *		Native groundcover
Parking groves				Green alleys
Grid pavers				

(P) – From City of Portland Storm water Management Manual, 1999 (Portland, 1999)

* - Proprietary system, Americast, Ashland, VA

Street Edge Bioretention



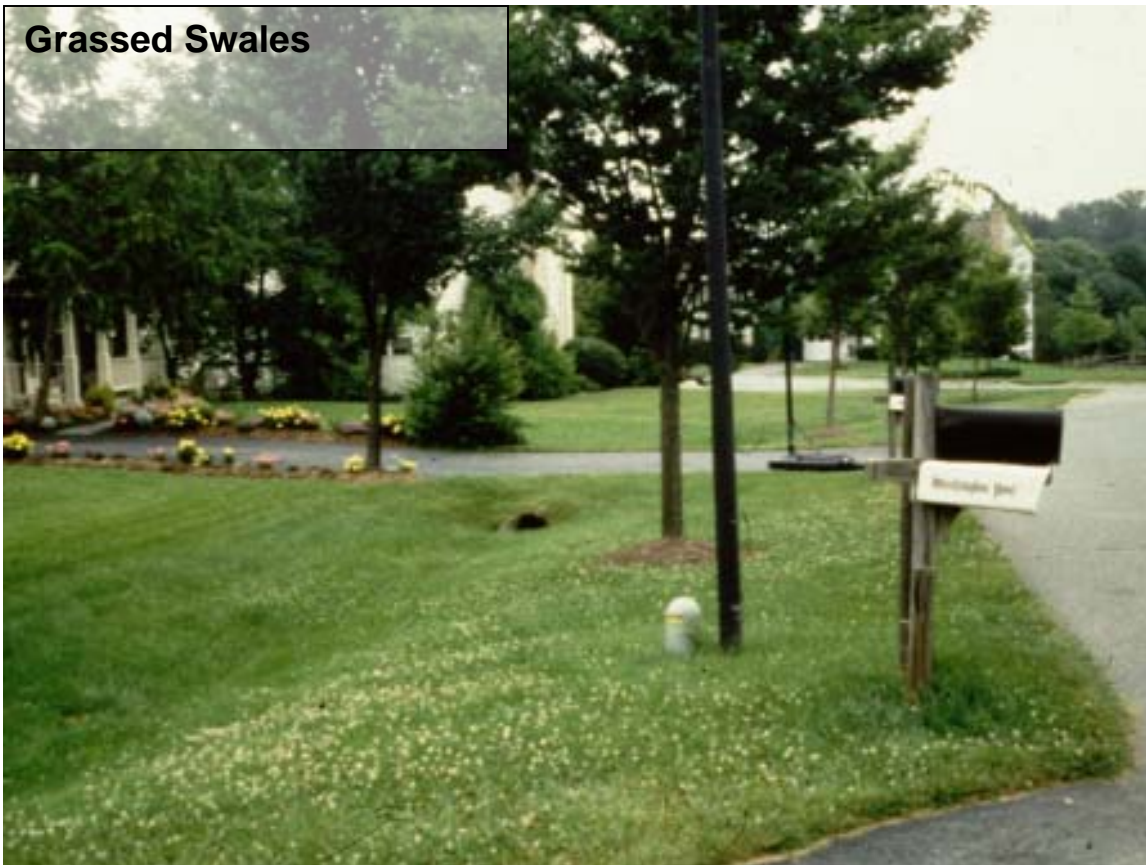
Raingardens



Rain Barrels/Disconnectivity



Grassed Swales



Permeable Pavers



Runoff Storage Filtration

Westfield Raingarden



From This
To This

